MODULE B MEMORY AND STORAGE · B8

Calculating file sizes

Original practice questions · 21 marks · ~25 minutes · OCR J277 spec 1.2.3

Name _____ Date _____

Instructions. Answer all questions in the spaces provided. Do not use a calculator. Show your working. 1 kilobyte (KB) = 1,000 bytes; 1 megabyte (MB) = 1,000 KB; 1 gigabyte (GB) = 1,000 MB. The marks for each part are shown in brackets [ ]. The total for this worksheet is **21 marks**.

1

Total: 4 marks

(a) Complete the table to give the formula used to calculate the size of each type of file. **[3]**

Type of file	File size =
Image	
Sound	
Text	

(b) State the unit that each formula in part (a) gives its answer in. **[1]**

2

Total: 4 marks

A railway station has an information screen. One image on the screen is 500 pixels wide and 400 pixels high, with a colour depth of 4 bits.

(a) Calculate the file size of the image in kilobytes. Show your working. **[3]**

Answer: ..... KB

(b) The image is saved again with a colour depth of 8 bits. The width and height stay the same. State the new file size in kilobytes. **[1]**

Answer: ..... KB

3 **Total: 3 marks**

A smart doorbell records a voice message from a visitor. The message lasts 25 seconds. It is recorded with a sample rate of 16,000 Hz and a bit depth of 8 bits.

(a) Calculate the file size of the message in kilobytes. Show your working. **[3]**

Answer: ..... KB

4 **Total: 3 marks**

A hotel booking system saves notes about each booking as a text file. One file contains 2,500 characters. Each character is stored using 16 bits.

(a) Calculate the file size in kilobytes. Show your working. **[3]**

Answer: ..... KB

5 **Total: 3 marks**

A garden centre website shows a row of 10 small icons. Each icon is 40 pixels wide and 50 pixels high, with a colour depth of 8 bits.

(a) Calculate the total file size of all 10 icons in kilobytes. Show your working. **[3]**

Answer: ..... KB

6 **Total: 4 marks**

A wildlife camera saves photos onto a 2 GB memory card. Each photo is 5 MB.

(a) Calculate how many photos the memory card can store. Show your working. **[2]**

Answer: ..... photos

(b) The camera also stores metadata with each photo. Explain how this affects the number of photos that fit on the card. **[2]**

Total for this worksheet: 21 marks